

Appl. No. 10/783,094
Amendment dated February 21, 2007
Reply to Office Action of November 21, 2006

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REMARKS

In the November 21, 2006 Office Action, claims 1-18 and 21-24 stand rejected in view of prior art. No other objections or rejections were made in the Office Action.

Status of Claims and Amendments

In response to the November 21, 2006 Office Action, Applicant has amended claims 1, 12, and 21. Thus, claims 1-18 and 21-24 are pending, with claims 1, 12 and 21 being the only independent claims. Applicant would like to thank the Examiner for his examination of this application. Reexamination and reconsideration of the pending claims are respectfully requested in view of above amendments and the following comments.

Rejections - 35 U.S.C. § 103

On pages 2-4 of the Office Action, claims 1, 2, 12, 13, and 21 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,527,372 (Choi et al.) in view of U.S. Patent No. 6,431,676 (Asauchi et al.). On pages 4 and 5 of the Office Action, claims 3 and 14 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Choi et al. in view of Asauchi et al., and further in view of U.S. Patent No. 6,257,687 (Iwamura). On pages 5-7 of the Office Action, claims 4 and 5 stand rejected under 35 U.S.C. §103(a) over Choi et al. in view of Asauchi et al., and further in view of U.S. Patent No. 4,908,635 (Iwasawa et al.). On pages 7 and 8 of the Office Action, claim 6 stands rejected under 35 U.S.C. §103(a) over Choi et al. in view of Asauchi et al., and further in view of U.S. Patent Publication No. 2003/0193539 (Umetani et al.). On pages 8 and 9 of the Office Action, claim 7 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Choi et al. in view of Asauchi et al. and Iwasawa et al., and further in view of Umetani et al. On pages 9 and 10 of the Office Action, claims 8 and 15 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Choi et al. in view of Asauchi et al., and further in view of U.S. Patent No. 6,843,548

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(Arakawa et al.). On pages 10-12 of the Office Action, claims 9, 11, 16, and 18 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Choi et al. in view of Asauchi et al., and further in view of U.S. Patent Application Publication 2002/0005873 (Suzuki). On page 13 of the Office Action, claims 10 and 17 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Choi et al. in view of Asauchi et al., and further in view of U.S. Patent No. 6,488,349 (Matsuo). On page 14 of the Office Action, claims 22-23 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Choi et al. in view of Asauchi et al., and further in view of U.S. Patent No. 6,998,230 (Schantz). On pages 14 and 15 of the Office Action, it is believed that claim 24 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Choi et al. in view of Asauchi et al., and further in view of U.S. Patent No. 5,266,098 (Chun et al.). In response, Applicant has amended claims 1, 12, and 21 to distinguish the claims from the prior art.

Specifically, independent claims 1, 12, and 21 recite a weight measuring section that measures the weight of droplets that have been discharged from the discharge head onto the weight measuring section, and a speed-measuring section that measures the velocity of in flight droplets that have been discharged from the discharge head. As seen on pages 3 and 4 of the Office Action, the rejections rely on Choi et al. to disclose a weight measuring section and speed-measuring section. However, referring to column 5, lines 50-53 of Choi et al., Applicant respectfully asserts that Choi et al. disclose weight measuring and speed-measuring sections that measure "velocity and a size of ink droplets *in* the printer head" and not the weight and velocity of droplets that have left the printer head as claimed. Further, as seen in column 6, lines 45 and 46 of Choi et al., Applicant respectfully asserts that Choi et al. disclose a process of measuring a firing velocity and a size [of ink droplets] of the printer head.

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Applicant respectfully asserts that the independent claims of the present application recite a weight measuring section that measures weight, and that size as disclosed is not equal to weight because droplets of different densities can be the same size and have different weight. Further, Applicant respectfully asserts that Choi et al. fail to disclose or to suggest using a weight measuring section that measures weight of droplets that have left the printer head.

Applicant respectfully asserts that Choi et al. discloses measuring a firing velocity of the ink droplets, while the independent claims of the present application recite measuring in flight velocity. Applicant respectfully asserts that due to environmental factors like gravity, atmospheric density, etc. the firing velocity, which is measured in the printer head can vary from the in flight velocity, which is measured outside the discharge head. Thus, Applicant respectfully asserts that the speed-measuring section recited in the independent claims of the present application is not the same as the process by which Choi et al. measure firing velocity.

Further, since weight and velocity of droplets that have been discharged from the discharge head are not measured in the invention of Choi et al., Applicant respectfully asserts that the condition storage section of Choi et al. is not configured to store optimal values of weight and in flight velocity as claimed in the independent claims of the present application.

Applicant respectfully asserts that Asauchi et al. are cited to disclose a basic drive waveform storage section and an adjusted waveform storage section, and do not disclose or suggest the weight measuring and speed-measuring sections as recited in the independent claims of the present application. Further, Applicant respectfully asserts that Asauchi et al. fail to disclose or to suggest storing or adjusting a waveform based on droplet weight and/or in flight velocity, and thus fails to disclose the basic drive waveform storage section and

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adjusted waveform storage section as claimed in the present application. Thus, Applicant respectfully assert that even if the Asauchi et al. reference were combined with the Choi et al. reference, it would fail to produce the devices of claims 1, 12, and 21 of the present application. In other words, since Choi et al. do not disclose or suggest the weight measuring and speed-measuring sections, the waveform-adjusting section cannot use data from these sections to make adjustments as claimed.

Applicant respectfully asserts that Iwamura is cited to disclose a waveform-adjusting section and does not disclose or suggest the weight measuring and speed-measuring sections as recited in the independent claims of the present application. Further, Applicant respectfully asserts that Iwamura fails to disclose or to suggest the waveform adjusting section of the independent claims for reasons similar to those stated above with regards to Choi et al. and Asauchi et al. Applicant respectfully asserts that Iwasawa et al. are cited to disclose a physical property value acquisition section and do not disclose or suggest the weight measuring and speed-measuring sections, waveform-adjusting section, and adjusted waveform storage section as recited in the independent claims of the present application.

Applicant respectfully asserts that Umetani et al. are cited to disclose a weight measuring section having the limitations of claim 6 of the present application. Applicant respectfully asserts that Umetani et al. fail to disclose or to suggest the speed-measuring sections, waveform-adjusting section, and adjusted waveform storage section as recited in the independent claims of the present application. Further, Applicant respectfully asserts that the Umetani et al. reference is not properly combinable with Choi et al. with regards to the weight measuring section because Choi et al. teach measuring droplet size inside the printer head in contrast to the recited limitations of the independent claims of the present application. As stated, Applicant respectfully asserts that size and weight are not synonymous, and that

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Choi et al. fail to disclose a condition storage section that stores an optimal weight of the droplets to be discharged. Even further, Applicant respectfully asserts that the invention of Umetani et al. is designed merely to measure the amount of ink discharged to determine defective nozzles, and that Umetani et al. fail to disclose or to suggest using a drive waveform to make adjustments as recited in the independent claims of the present application.

Even further, Applicant respectfully asserts that Arakawa et al. are cited to disclose a speed measuring section that is configured to compute the velocity of droplets by using the position of the droplets discharged from the discharge head at two different points in time. Applicant respectfully asserts that Arakawa et al. fail to disclose or to suggest the weight measuring and condition storage sections, waveform-adjusting section, and adjusted waveform storage section as recited in the independent claims of the present application for reasons similar to those stated above with regards to Choi et al. and Asauchi et al.

Applicant respectfully asserts that Suzuki is cited to disclose a waveform-adjusting section as recited in claims 9, 11, 16, and 18 of the present application and does not disclose or suggest the weight measuring and speed-measuring sections, waveform-adjusting section, and adjusted waveform storage section as recited in the independent claims of the present application. Applicant respectfully asserts that Matsuo is cited to disclose a waveform-adjusting section as recited in claims 10 and 17 and does not disclose or suggest the weight measuring and speed-measuring sections, waveform-adjusting section, and adjusted waveform storage section for reasons similar to those stated above with regards to Choi et al. and Asauchi et al. Applicant respectfully asserts that Schantz is cited to disclose an electrooptical device and electronic equipment having an electrooptical device and fails to disclose or to suggest the weight measuring and speed-measuring sections, waveform-

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adjusting section, and adjusted waveform storage section as recited in the independent claims of the present application.

Applicant respectfully asserts that Chun et al. is recited to disclose a speed measuring section having a camera and strobe light. Applicant respectfully asserts that the weight measuring section, waveform-adjusting section, and adjusted waveform storage section as recited in the independent claims of the present application. Further, Applicant respectfully asserts that the Chun et al. reference is not properly combinable with Choi et al. and Asauchi et al. because Chun et al. relates to metal droplets while the latter two relate to printers.

Applicant respectfully asserts that this arrangement is *not* disclosed or suggested by the prior art of record. It is well settled in U.S. patent law that the mere fact that the prior art can be modified does *not* make the modification obvious, unless the prior art *suggests* the desirability of the modification. Accordingly, the prior art of record lacks any suggestion or expectation of success for combining the patents to create the Applicant's unique arrangement.

Moreover, Applicant believes that the dependent claims are also allowable over the prior art of record in that they depend from independent claims, and therefore are allowable for the reasons stated above. Also, the dependent claims are further allowable because they include additional limitations. Thus, Applicant believes that since the prior art of record does not disclose or suggest the invention as set forth in independent claims, the prior art of record also fails to disclose or suggest the inventions as set forth in the dependent claims.

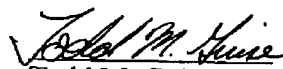
Therefore, Applicant respectfully requests that this rejection be withdrawn in view of the above comments and amendments.

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In view of the foregoing amendment and comments, Applicant respectfully asserts that claims 1-18 and 21-24 are now in condition for allowance. Reexamination and reconsideration of the pending claims are respectfully requested.

Respectfully submitted,


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